

NAVAL WAR COLLEGE
Newport, R. I.

Improving C2 of Strategic Airlift Forces in Contingencies

by

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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19970520 258

13 June 1997

DTIC QUALITY INSPECTED 4

Paper directed by
George W. Jackson, Capt, USN
Chairman, Department of Joint Military Operations

DISTRIBUTION STATEMENT A

Approved for public release;
Distribution Unlimited

REPORT DOCUMENTATION PAGE

1. Report Security Classification: UNCLASSIFIED			
2. Security Classification Authority:			
3. Declassification/Downgrading Schedule:			
4. Distribution/Availability of Report: DISTRIBUTION STATEMENT A: APPROVED FOR PUBLIC RELEASE; DISTRIBUTION IS UNLIMITED.			
5. Name of Performing Organization: JOINT MILITARY OPERATIONS DEPARTMENT			
6. Office Symbol: C		7. Address: NAVAL WAR COLLEGE 686 CUSHING ROAD NEWPORT, RI 02841-1207	
8. Title (Include Security Classification): Improving Command and Control of Strategic Airlift Forces in Contingencies (U)			
9. Personal Authors: Major John C. Millander, USAF			
10. Type of Report: FINAL		11. Date of Report: 7 Feb 97	
12. Page Count: 22			
13. Supplementary Notation: A paper submitted to the Faculty of the NWC in partial satisfaction of the requirements of the JMO Department. The contents of this paper reflect my own personal views and are not necessarily endorsed by the NWC or the Department of the Navy.			
14. Ten key words that relate to your paper: Command, Control, Strategic, Airlift, Theater, Doctrine, C-17, Direct Delivery			
15. Abstract: The post-cold war military drawdown resulted in significant force reductions and re-organization of the United States Air Force. These changes have resulted in peacetime efficiencies in the airlift command and control (C2) structure at the cost of wartime effectiveness. Airlift C2 organization and doctrinal lessons learned in Vietnam and validated by success in the Gulf War have been abandoned. The emergence of the C-17 as America's core airlifter will place increased demand on this re-structured C2 system. A return to some of the organizational and doctrinal concepts conceived in Vietnam and proven in the Gulf War is necessary to ensure we attain every available benefit from our limited airlift assets.			
16. Distribution / Availability of Abstract:	Unclassified X	Same As Rpt	DTIC Users
17. Abstract Security Classification: UNCLASSIFIED			
18. Name of Responsible Individual: CHAIRMAN, JOINT MILITARY OPERATIONS DEPARTMENT			
19. Telephone: 841-6461		20. Office Symbol: C	

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Improving C2 of Strategic Airlift Forces in Contingencies

Introduction

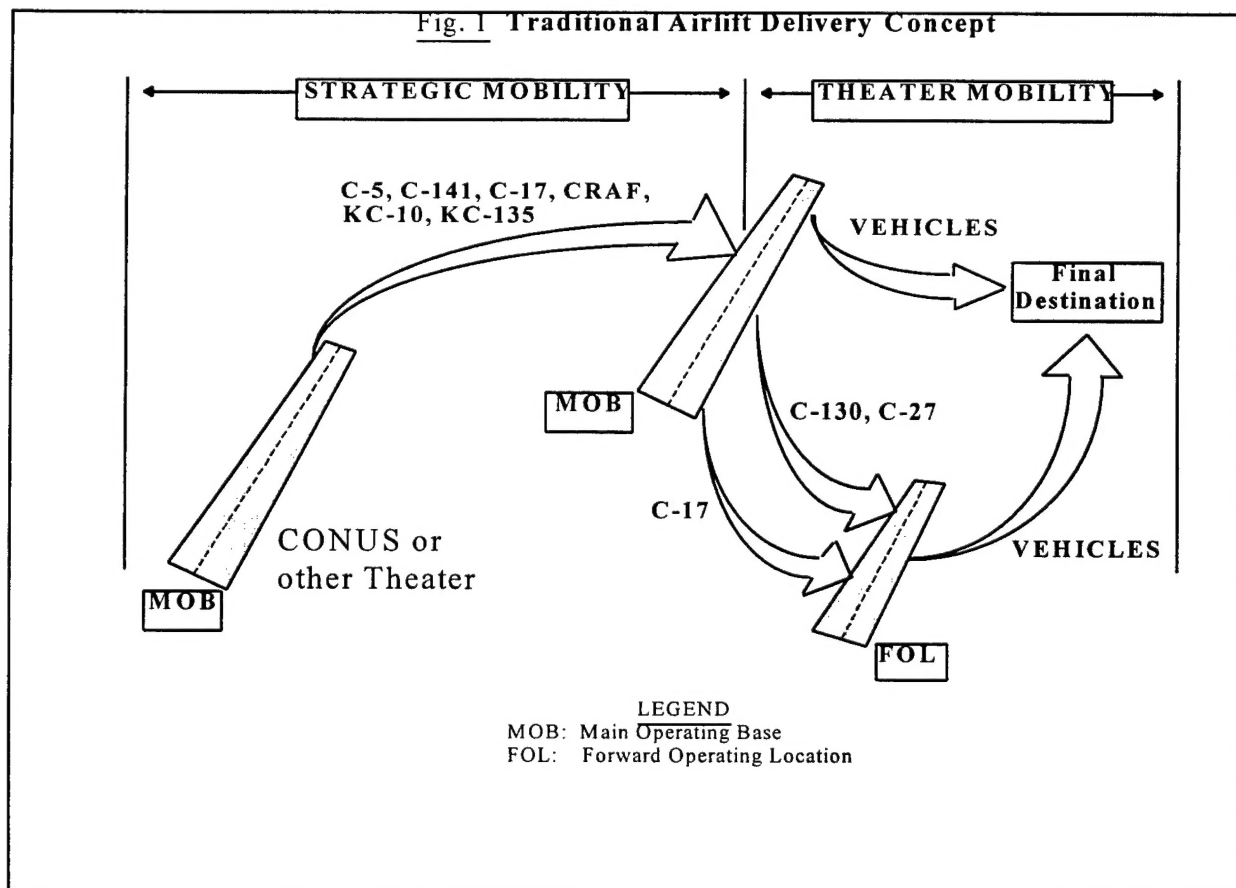
Airlift is a joint asset provided by the United States Air Force (USAF). The post-cold war military drawdown resulted in substantial USAF force reductions and re-organization. These changes resulted in peacetime efficiencies in the airlift command and control¹ (C2) structure at the cost of wartime effectiveness. Airlift C2 organization and doctrinal lessons learned in Vietnam and validated by success in the Gulf War have been abandoned. The emergence of the C-17 as America's core airlifter will place increased demand on the re-structured C2 system. A return to some of the organizational and doctrinal concepts conceived in Vietnam and proven in the Gulf War is necessary to ensure we attain every available benefit from our limited airlift assets.

This paper will discuss past, present, and future trends of airlift C2. After providing a brief airlift primer, it will document C2 of airlift in the Gulf War with particular attention to how the lessons learned from airlift operations during the Vietnam conflict were incorporated into the Gulf War airlift operations. Next, it will examine the present airlift and evaluate how well the USAF has applied Gulf War lessons learned to current doctrine and organization. Finally, the paper will address the future of strategic airlift in theater, including the impact of the C-17 and direct delivery and will include some recommendations for CINCs to improve the C2 of strategic airlift forces in theater.

¹ The term "command and control" (C2) refers to the **process** that commanders and organizations use to plan, direct, coordinate, and control their own and friendly forces and assets in accomplishment of their mission. See "*Operational Functions*," Joint Military Operations Department, Naval War College (Newport: 1996), 2. (NWC 4103)

An Airlift Primer

The traditional view of airlift is to use the large air transport aircraft such as the C-141, KC-10s, and the Civilian Reserve Air Fleet (CRAF) to transport bulk cargo and passengers from major airports in the United States to major airports in the theater of operations. Outsize² cargo would be transported by C-5 aircraft using the same structure. From the overseas bases, C-130s, C-2s and other smaller aircraft would move the high priority cargo and passengers to more austere forward airbases or carrier battle groups. Surface transport is normally required for outsize and lower priority cargo. See Figure 1.



² Outsize cargo is generally defined as cargo physically too large to fit on the C-130 aircraft. In some instances the cargo is both too large and too heavy for C-130 transport.

Airlift in the Past: Applying the lessons of Vietnam

Peacetime Airlift C2 Organization prior to Gulf War

To fully evaluate the C2 of strategic aircraft during contingency operations, we must first turn our attention to the peacetime airlift structure. This peacetime organization incorporated many lessons learned from Vietnam airlift organization, as articulated by Lt Col Devereaux in his research study.³ A few of those lessons are:⁴

1. Need for theater airlift nurtured by a single command
2. Consolidated theater airlift command and control organization
3. Theater airlift operationally controlled by a theater airlift commander
4. Requirement for a cadre of airlift command and control specialists
5. Weakness of strategic-theater interface
6. Limited use of strategic aircraft to augment theater lift

Prior to the Gulf War, all strategic and theater airlift aircraft were assigned to Military Airlift Command (MAC). MAC provided geographic CINCs theater aircraft on a rotating basis. Airlift was controlled by Airlift Divisions (ALD),⁵ the heart of the entire airlift C2 system. The ALDs effectively fused strategic and theater airlift management “under one roof” and provided continuity in theater.

The peacetime organization effectively incorporated the first three Vietnam lessons. The ALD satisfied the fourth lesson by providing a training ground for a cadre of airlift command and control specialists. MAC established no significant reforms to address the last two airlift lessons.

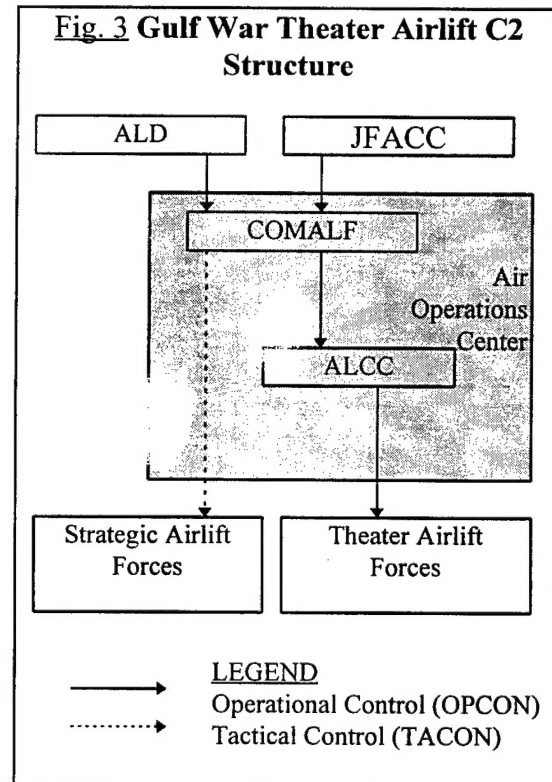
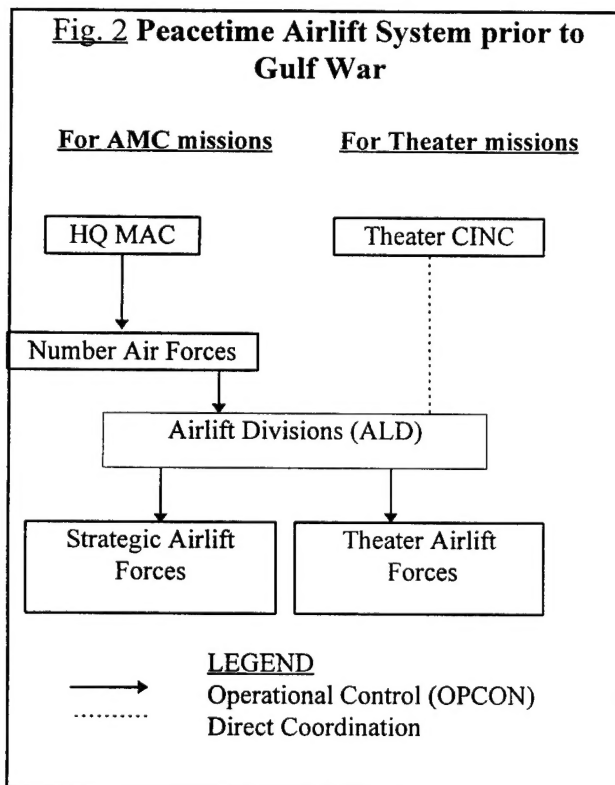
³ A full evaluation of airlift lessons learned from the Vietnam conflict is beyond the scope of this paper. Several good works on this subject are available and listed in the bibliography. For brevity only one is cited here.

⁴ Richard Devereaux, *Theater Airlift Management and Control* (Montgomery: U.S. Air University. School of Advanced Aerospace Studies, 1994), 53.

⁵ The 322nd ALD located at Ramstein AB, Germany and the 834th ALD at Hickam AFB, Hawaii.

Contingency Airlift C2 Organization in Gulf War

Airlift forces were commanded by a theater Commander of Airlift Forces (COMALF). The provisional 1610th Airlift Division was formed to mirror the existing ALD in Europe and give the COMALF a mechanism to “have administrative and disciplinary control.” This ALD was created at the request of both the JFACC, General Horner and the COMALF, Brig Gen Frederick Buckingham.⁶ The COMALF was also the CINC’s deputy chief of staff for airlift and served as the primary point of contact for all theater airlift issues. He also wore a “third hat,” exercising tactical control (TACON) of strategic airlift forces in theater for CINCMAC. This effectively brought C2 of both strategic and theater airlift forces together below the JFACC level. The peacetime and Gulf War airlift C2 organizations are depicted in Figures 2 and 3.



⁶ Devereaux, 26.

The control of theater airlift was accomplished via the Airlift Coordination Cell (ALCC). The ALCC was located in the Air Operations Center (AOC) and staffed primarily by airlift specialists from the 322nd ALD. The ALD proved itself an excellent training ground for this cadre of airlift specialists. The ALCC reported directly to the COMALF who reported directly to the JFACC. This arrangement effectively balanced the levels of command and span of control of the airlift forces.⁷ In this sense it confirmed the value of consolidated airlift C2 under a single commander and organization and demonstrated the value of a trained cadre of airlift managers. Predictably, two aspects of strategic-theater airlift integration emerged as continuing weaknesses.

Repeat Weakness: Poor execution of strategic-tactical interface

Devereaux points out the strategic-theater interface in Vietnam was a weak area. He recounts anecdotal evidence of scheduling problems and conflicts of priority between strategic and theater assets.⁸ Since MAC made no significant efforts after Vietnam to improve these weaknesses, their appearance in the Gulf War is no surprise. Menarchik cites several causes; one was the conflict between Air Force and Army doctrine and the priority of forces CENTCOM established in the initial deployment stage. Gen Schwarzkopf put highest priority on combat forces and moved units to Saudi Arabia without much of their logistical support force. This resulted in a cargo backlog at main Saudi Arabian offload bases because there was little infrastructure in place or manpower available to logistically handle the onward movement and supply operation. Coupled with fueling delays, this worked to increase the normal 3 hour 15

⁷ "Battlespace Information, Command and Control, Operational Intelligence, and Systems Integration," Joint Military Operations Department, Naval War College (Newport: 1996), 5. (NWC 2127)

⁸ Devereaux, 7-19.

minute ground time of the arriving strategic aircraft to 6, 7 or even 9 hours. By the middle of September the strategic airlift system had about 35 onload locations in the United States and only three in the offload sites in Saudi Arabia--Dhahran, Riyadh, and Jubail. MAC did not adjust the flow into these main bases and the three available offload sites quickly became saturated. It had 28 aircraft awaiting fuel at one time in Dhahran.⁹ The COMALF lobbied for more offload bases, but they were slow in coming. The Army opposed adding more bases claiming insufficient logistical infrastructure to support land transportation of the cargo to forward units. Additional offload bases eventually opened up when Gen Schwarzkopf became engaged.

At the three main offload bases, conflicts arose between the long line of strategic aircraft awaiting fuel to depart the theater and the theater aircraft themselves. The ALCC established a slot time system that allocated landing times to help alleviate the long ground delays. The decision for theater aircraft to receive priority slot times further complicated the strategic effort. This is a clear example of poor coordination between the ALCC and MAC to keep supplies coming steadily from the United States and confirmed the "lesson learned" (weakness of strategic-theater interface) from Vietnam.¹⁰ This "lesson learned" really was not learned after all.

Repeat Weakness: Strained use of strategic airlift augmentation

Another shortfall of the Gulf airlift effort (which was also a weakness in Vietnam) was the limited use of strategic aircraft to augment theater assets. Strategic assets were having a difficult time just refueling and returning to European staging bases, not to mention taking

⁹ Douglas Menarchik, *Powerlift—Getting to Desert Storm* (Westport: Praeger 1993), 72.

¹⁰ *Ibid.*, 72-85.

additional time to fly another lift in theater before returning. The requirement still existed to move outsize cargo from the three main offload bases. After several months, the ALCC worked out an arrangement with MAC where aircraft would fly one in-theater sortie before departing back to Europe, but this proved to be inefficient. The in-theater schedule had to be coordinated days in advance and was unable to react to last minute changes. Central Air Forces' transportation officer decried the convoluted request process for accessing strategic lift, claiming "existing policy and procedures did little to move outsize cargo, and forced the line-haul of assets nearly 1500 miles across five international borders."¹¹

In summary, all six Vietnam lessons learned listed on page four were confirmed again in the Gulf. MAC had structured itself to successfully achieve the first four. The last two weak areas of poor strategic-theater interface and strategic airlift augmentation were identified in Vietnam and repeated in the Gulf War, i.e., these were lessons not really learned.

Airlift Now: Applying the Lessons of the Gulf War?

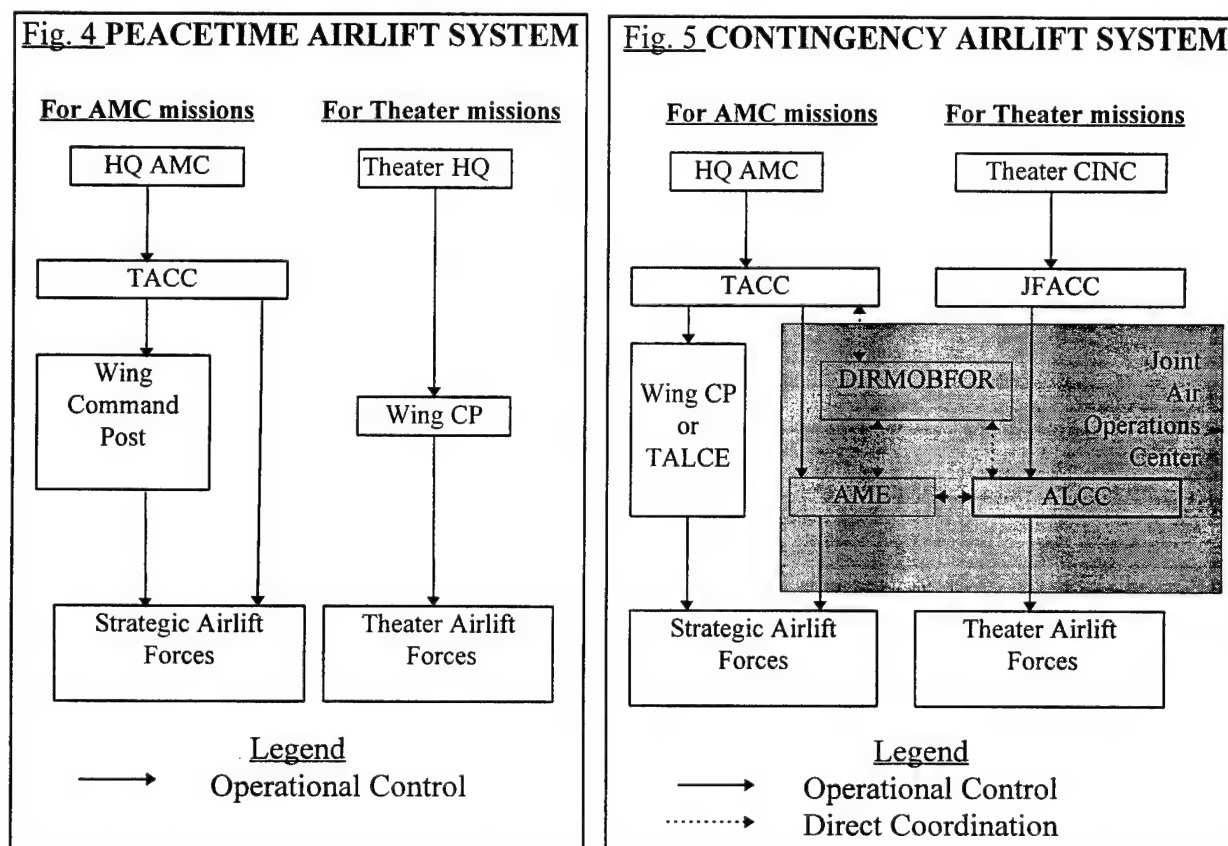
Changes to the Peacetime organization

The post Gulf War era brought many changes for all the military services and USAF was no exception. The command and control structure and organization of airlift forces underwent a radical shift in 1992 with the USAF reorganization. Recall that prior to 1992, theater assets were controlled by an airlift division that coordinated routine theater movements in house and extraordinary events with higher CONUS C2 echelons. This provided a smooth seam between

¹¹ Devereaux, 31.

strategic airlift assets operating to forward bases in theater and provided regional CINCs the C2 mechanism for C-130 squadrons “CHOPed”¹² to the theaters on a rotating basis. After the formation of Air Mobility Command (AMC) in 1992, the Airlift Divisions were abolished.

Strategic airlift assets now coordinate with the Tanker Airlift Control Center (TACC) directly or through local command posts. Additionally, all theater airlift assets were permanently transferred from AMC to the corresponding Air Force component of the geographic CINC’s forces. Figures 4 and 5 depict the present day peacetime¹³ and contingency airlift systems.¹⁴



¹² Change of Operation control.

¹³ Mark Zamzow, *Theater Airlift: Are We Realizing its Full Potential?* (Montgomery: U.S. Air University. Air War College, 1993), 12.

¹⁴ U.S. Department of Defense, Joint Chiefs of Staff. *Joint Tactics, Techniques, and Procedures (JTTP) for Theater Airlift Operations*, Joint Publication 3-17 (Washington: 1996), Chapter II.

Tanker Airlift Control Center (TACC); One stop shopping for strategic mobility

AMC retains combatant command (COCOM) and operational control (OPCON) of the strategic aircraft regardless of their location in the mobility system.¹⁵ Command and control of these assets is centrally located at the TACC, at Scott Air Force Base, Illinois.¹⁶ For contingency operations, AMC maintains several layers of deployable C2 units to assist in the planning and execution of missions. Only one is discussed here.

Air Mobility Element; Direct contact from CONUS to the Theater

During contingencies the Air Mobility Element (AME) deploys from CONUS to coordinate strategic airlift directly with the theater's (Joint) Air Operations Center (JAOC), but remains OPCON to AMC.¹⁷ (See Figure 4) In the JAOC, the AME coordinates closely with the Airlift Coordination Cell (ALCC), which is the CINC's control cell for all theater airlift operations. It is important to note the AME only controls AMC assets. **Theater airlift forces are not controlled.**

An AME deployed to Vicenza, Italy (location of the Combined Air Operations Center) during Operation JOINT ENDEAVOR to coordinate arrival of Implementation Forces to Bosnia. This arrangement worked very well and provided a seamless interface of the strategic and theater

¹⁵ U. S. Air Force, Air Mobility Command, *1997 Air Mobility Master Plan* (Scott Air Force Base, IL: 1996), 66.

¹⁶ For a complete description of all deployable command and control units the reader is referred to the AMC Internet home page at <http://www.safb.af.mil/hqamc>.

¹⁷ U.S. Department of Defense, Joint Chiefs of Staff. *Joint Tactics, Techniques, and Procedures (JTTP) for Theater Airlift Operations*, Joint Publication 4-01.1 (Washington: 1996), II-11.

systems.¹⁸ It is a good example of a change in C2 organization to finally “learn” a Gulf War and Vietnam lesson.

Change of Airlift C2 Doctrine

The COMALF position that existed in the Gulf War has been replaced with the Director of Mobility Forces (DIRMOBFOR) position. Joint doctrine now gives the primary manager of theater airlift forces, the DIRMOBFOR, only **coordinating authority** with the strategic and theater control cells.¹⁹ The reduction of responsibility and corresponding removal of execution authority in airlift issues also includes a reduction in rank. The COMALF of the Gulf War was an O-7 billet; the DIRMOBFOR in current doctrine is an O-6 billet. This reduction in authority and rank puts mobility issues at risk for lack of a high ranking proponent to ensure proper visibility. The DIRMOBFOR is essentially a watered down COMALF with no execution authority. As demonstrated in the Gulf War, it was difficult to procure the needed support mechanisms for the airlift operations **with a COMALF**. The need for increased airlift assets and airbases went largely ignored when articulated by a brigadier general. When similar requirements arise in the next conflict the same request will have reduced impact **without a COMALF**. The request would now originate from an O-6 DIRMOBFOR vice an O-7 COMALF. **This restructuring contradicts the lesson learned of a consolidated airlift commander in theater.**

¹⁸ *Air Mobility Master Plan*, 74.

¹⁹ *JTTP for Theater Airlift Operations*, II-10.

The Gulf War taught us there will probably be an increased emphasis in future conflicts on use of air power to conduct fires. Consequently, the JFACC will be busy conducting offensive or defensive air operations and will not have time to work airlift problems. This duty should rightly fall upon a mobility officer under the JFACC's command, but with delegated OPCON of theater and TACON of strategic airlift forces. This perfectly describes the COMALF.

Reorganization Impact: One step forward, two steps back

The creation of the deployable AME to coordinate with the theater ALCC has greatly improved the strategic-theater interface weakness and simplified access to strategic airlift augmentation. This represents lessons truly learned. The transfer of aircraft and restructuring represent lessons once learned but now forgotten. The abolishment of the airlift divisions stovepiped the peacetime airlift system and deprived the contingency system of that valuable pool of experienced theater airlift C2 specialists. Interestingly, this organizational change is contradictory with published Air Force doctrine. The doctrine states, "Air Force elements should be organized for wartime effectiveness rather than peacetime efficiency."²⁰ The doctrinal discussion continues, "Where total wartime organization is not possible, the peacetime organization should be designed and trained to make the transition from peace to war swiftly and effectively."²¹ One only has to look at Figures 4 and 5 (page 9) to see the marked difference in

²⁰ U.S. Air Force, *Basic Aerospace Doctrine of the U.S. Air Force*, AFM 1-1 Vol 1 (Washington: 1992), 17.

²¹ U.S. Air Force, *Basic Aerospace Doctrine of the U.S. Air Force*, AFM 1-1 Vol 2 (Washington: 1992), 231.

peacetime and contingency organization. The current airlift organization prevents either a swift or effective transition from peace to war operations.

The lessons learned from Vietnam and the Gulf War are summarized in Table 1. The last two columns evaluate if the lesson learned is reflected in current C2 structure and doctrine. It is apparent the Air Force has done much to remedy the weakness experienced in the Gulf War but at the same time has **abandoned the structure and doctrine learned in Vietnam that helped make airlift so successful**. The “No” in the last two columns are lessons once learned but now forgotten.

Lesson Learned	Vietnam	Reform Attempted?	Reform successful in Gulf?	Reflected in present structure?	Reflected in present doctrine?
Airlift nurtured under one command	Y	Y	Y	N	N
Consolidated theater C2 organization	Y	Y	Y	Y	Y
Theater airlift under one commander	Y	Y	Y	N	N
Need for Trained C2 cadre	Y	Y	Y	N	N
Weak Strategic-Theater interface	Y	N		Y	Y
Strategic augmentation of theater assets	Y	N		Y	Y

Table 1. Integration of Lessons Learned in Structure and Doctrine

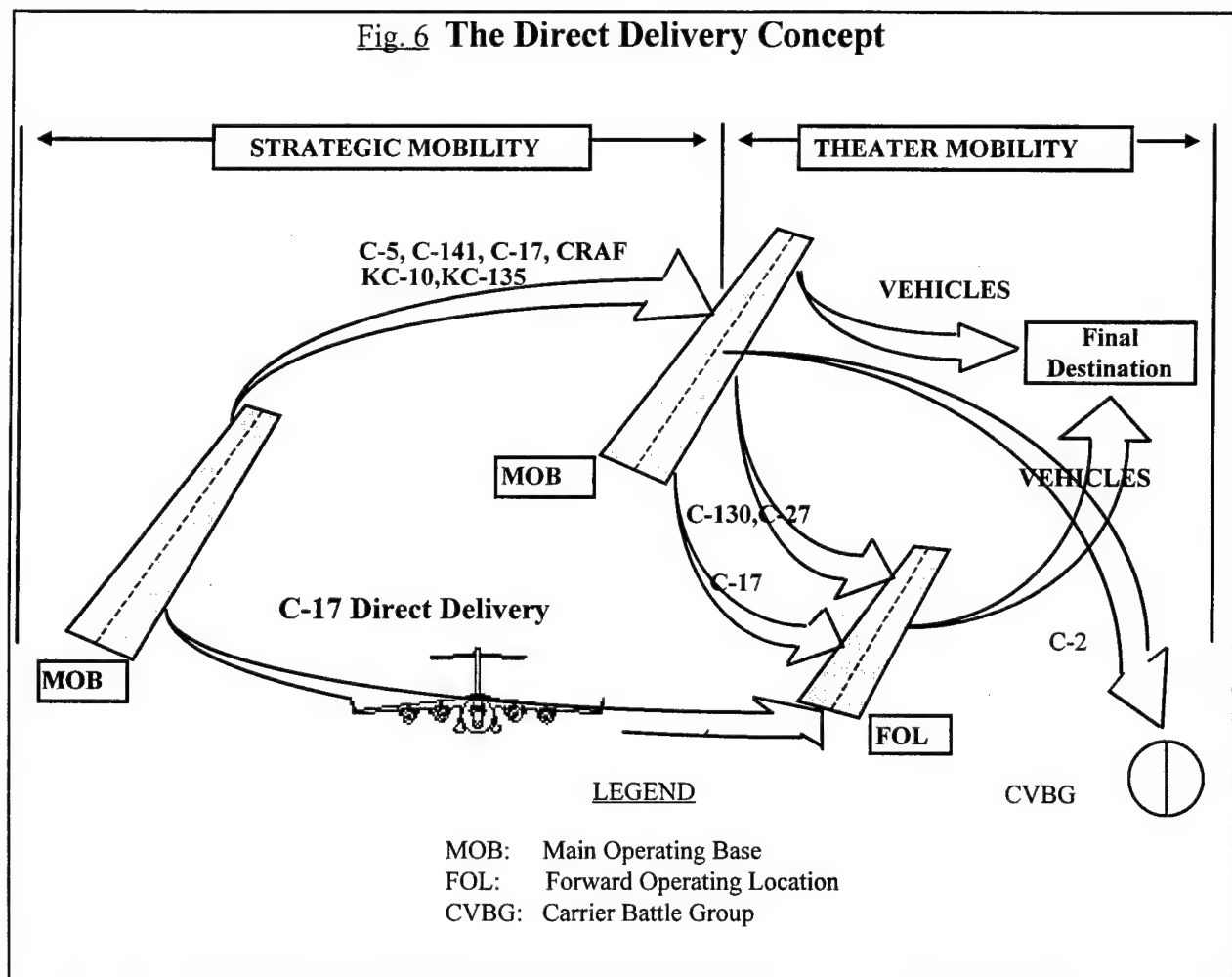
Future of Airlift: Direct Delivery impact on C2

Direct Delivery is a strategic mission that eliminates theater airlift by delivering to a forward airfield close to the payload’s final destination. Direct delivery shortens in-transit time, reduces congestion at main operating bases, and enhances sustainment of forward forces.²² The C-17 is specifically designed for the direct delivery mission, brings much needed strategic capability, and augments the theater airlift force as well. Because of the unique design qualities

²² *JTTP for Airlift Support*, III-8.

of the aircraft, it performs both strategic and theater missions equally well. This results in a blurring of the boundary line between strategic and theater missions.

Lt Col Charles E. Miller, a pioneer of airlift doctrine, accurately predicted the increased demand direct delivery will have on the C2 system.²³ C-17s landing at forward bases, instead of main bases, will have to appear on the daily Air Tasking Order to insure de-confliction and coordination. The creation of the AME-ALCC interface provides this close coordination, but conflicts are inevitable and must be solved quickly due to the inherently less flexible strategic



²³ Charles Miller, *Airlift Doctrine* (Montgomery: U.S. Air University. Center for Aerospace Doctrine, Research and Education, 1988), 429-433.

missions. This is another good argument for re-instating the COMALF. This close coordination is best achieved if the senior airlift manager has authority over airlift assets. Simply put, the JFACC is not the best airlift manager.

Another benefit to closer coordination between the strategic and theater forces is the augmentation of theater airlift by strategic assets. This was a repeat weak area in the Gulf and the use of the C-17 for theater missions in the future will help. According to one AF study, had the C-17 been available during the Gulf War, one out of every five C-17s flying a single in-theater shuttle would have replaced 16 C-130s in the area of responsibility.²⁴ This will not only provide the theater with the needed outsize cargo capability but will also reduce scheduling problems. The use of the C-17 strategic direct delivery followed by an intra-theater augmentation sortie will reduce the required number of theater assets required, resulting in fewer theater aircraft to schedule on a regular basis.

The C-17's flexibility will complicate decisions on how best to employ it. As Lt Col Devereaux stated, "Understanding the tradeoffs between strategic lift, direct delivery, intra-theater shuttles, and so forth, will require an airlift staff knowledgeable of both the strategic deployment and intra-theater airlift needs."²⁵ The current airlift organization does not provide the opportunity to grow this cadre of airlift C2 specialists in theater. AMC can supply the necessary expertise on the strategic side of the house but there will be little or no knowledge of the local theater.

²⁴ Devereaux, 51.

²⁵ Ibid., 51.

Joint doctrine now addresses the benefits of direct delivery, but inclusion of direct delivery into doctrine does not guarantee it's use. Mobility planners must start to think in terms of using direct delivery in places where it makes good sense to do so. They must seek out ways to use this new asset when preparing operations plans in both the deliberate planning process and crisis action planning. Intelligent use of this emerging capability can greatly enhance sustainment of the forward deployed forces.

Conclusions

Airlift is a joint asset and the USAF has a responsibility to provide the best possible airlift service to its customers. Lessons learned are not really "learned" until we change our organization, training and doctrine to accommodate them. USAF did well incorporating some of the lessons learned from Vietnam into the airlift structure that performed so well in the Gulf War. The post-Gulf War restructuring and doctrinal changes adequately addressed the repeat weaknesses in the Gulf but at the same time **abandoned many of the lessons learned from Vietnam**. The advent of the C-17 will further strain the theater airlift C2 system. We must turn back the clock on those abandoned lessons to maximize the benefit of our limited airlift resources. The recommendations below will improve the contingency airlift C2 organization. Although beyond the scope of this paper, USAF should also consider a peacetime airlift system re-organization. Adopting the proposed command and control organizations (Figures 7 and 8) will maximize future airlift performance.

Recommendations to the CINCs

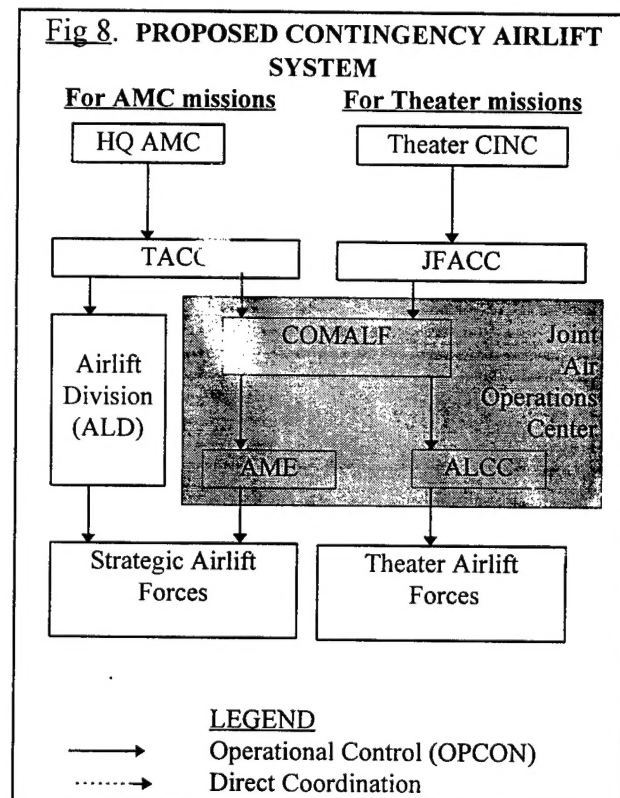
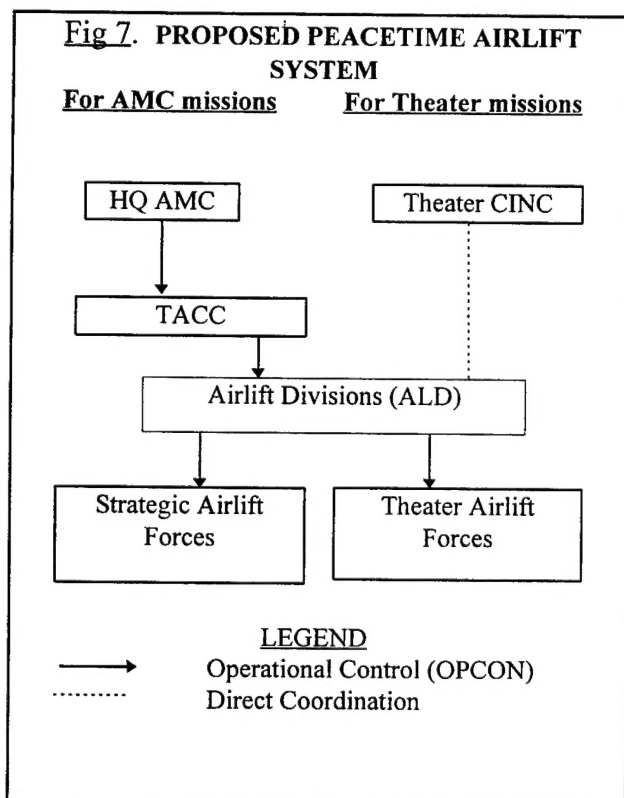
1. Re-instate the COMALF position in the JAOC in place of the current DIRMObFOR.

This organization would provide *unity of effort* by subjugating the COMALF under the JFACC and simultaneously provide the COMALF span of control to all airlift assets.

2. Place more emphasis on cultivating a dedicated theater airlift C2 cadre of specialists.

Re-creating the abolished airlift division concept would accomplish this. These experts are invaluable to management of theater contingency assets and smooth the coordination of the strategic-theater assets.

3. Demand inclusion of direct delivery concepts of force deployment into Deliberate Planning Process Operations Plans. Joint Doctrine discusses direct delivery, but unified command staffs must start to incorporate direct delivery into the way they think about global mobility.



GLOSSARY

ALCC	Airlift Coordination Cell
AMC	Air Mobility Command
AME	Air Mobility Element
AOC	Air Operations Center
CHOP	Change of Operational Control
C2	Command and Control
CINC	Commander-in-Chief
CP	Command Post
CRAF	Civil Reserve Air Fleet
DIRMOBFOR	Director of Mobility Forces
FOL	Forward Operating Location
HQ	Headquarters
JAOC	Joint Air Operations Center
JFACC	Joint Forces Air Component Commander
MAC	Military Airlift Command
NAF	Numbered Air Force
OPCON	Operational Control
TACC	Tanker Airlift Control Center
TALCE	Tanker Airlift Control Element
USAF	United States Air Force

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